FYP Ideas - Fall 2023

1. FYP Title

FYP Description

2. Imagery Based brick kiln detection system

Green Guardian is an innovative mobile app developed to detect plant diseases using cutting-edge deep learning algorithms and the TensorFlow Lite framework. This app serves as an indispensable resource for farmers and gardeners who strive to ensure that their plants remain healthy, safeguarding against disease damage. Green Guardian allows users to easily and rapidly diagnose plant diseases without an internet connection, making it ideal for remote work environments. This project marks a key step toward sustainable agriculture and protecting our environment through reduced pesticide usage; using cutting-edge artificial intelligence technologies we developed an easy-to-use mobile app which detects plant diseases remotely with pinpoint precision.

3. Gamification of Cyber Security Attacks

Cyber security awareness training using gamification in VR

4. Fake Twin

Fake Twin is an web application which allows you to create your virtual avatar and generate a video clip using the provided text. First you provide approximately 5 seconds video of yourself looking in the camera without moment, secondly you provide approximately 20 seconds long audio clip of you speaking something. At last you provide the Text content to the application, then Fake Twin integrate your voice and audio with the text and outputs a video of your virtual twin reading/speaking the text.

5. Smart Online Shopping with Intelligent Home Delivery

This is an AI based smart online shopping and will be backed-up by AI based home delivery

6. Pet World

Our Pet World is an mobile Application that interacts with buying and selling of pets. It will be able to identify the breed of user's dog

7. Implementing a Learning Management System for Cyber Security Modules

A Learning Management System (LMS)for delivering training of different cyber security modules. This LMS will provide an efficient, user-friendly, and interactive platform for delivering cyber security training modules, tracking users progress, and assessing their understanding of the material.

8. SlickStack

Retail products On-Shelf availability in retail/grocery store, based on image classification

9. Immersive Crime Scene Reconstruction and Training Platform

Virtual crime scene reconstruction is a concept that involves creating a virtual reality (VR) or augmented reality (AR) system that can assist detectives and forensic experts in reconstructing a crime scene in a more precise and effective manner. The system would allow users to study the crime scene in a more immersive manner as well as depict the crime scene in 3D, including the location, evidence, and other pertinent information. Here are a few probable characteristics of the system: modelling the murder scene in 3D To give a precise and thorough representation of the scene, the system would build 3D models of the crime scene using measurements and data from the actual world, including pictures and videos.

10. ComplySimplify

A Cybersecurity product which will allow companies to comply themselves to national or global standards of information security. It is a quick, simple and smarter route for compliance by replacing manual procedures.

11. Groc-POS

This project will consist of the development of a mobile-based and web-based POS system that will use techniques of object detection and identification to recognize different grocery and different kinds of store items.

12. E-Student ID card

The project aims to develop a multifunctional digital student ID card that integrates multiple functions such as identification, attendance , library card, bus ride, cafe service, admit card, weekly schedule generation and provides a seamless experience for the students. The system will integrate biometrics, cryptography and machine readable codes to achieve it's goals.

13. EzAccess

This project aims at creating a web based application that will help users find the similar electronic products from different websites at the same platform. This will help users save their time and effort for not visiting each website and review the specs again and again, instead the particular related information regarding the product will be in easy access and they will be sorted/filtered on the recommendation system built through customer reviews of specific products as aspect-sentiment analysis imparts vital role in classification of text and polarity detection.

14. Digital Disease Detection and Eco-friendly Management of Citrus fruits

We will develop a model that will be trained to detect the Canker disease in Citrus plants. The model will take an image of either the leaves or the fruit as input and will be able to output whether the plant has disease or not. And if it has the disease, then at what stage is the disease. Then using this model, we will develop an android application that will be of help to farmers in identifying the disease. This app will also help the farmers with the management of the disease at various stages.

15. Data Janitor

Data Janitor is a big data utility aimed at data scientists and laypersons who are not that proficient in coding. It will be a one stop solution to handle structured and unstructured data. The user will upload their data on the computer program and after the initial step of preprocessing, the tool will be able to perform machine learning operations and data analysis on a cluster of computers.

16. Markhor

Our project MARKHOR is going to be the chrome extension which hunts the cryptojacking malware scripts running on the web browsers through the malicious websites and protect the user cpu and gpu resources from getting exploited.

17. Transformer based AI engine for Pneumonia Detection and Risk Assessment

Our AI model will segment pneumonia from a chest Xray and provide risk assessment of the medical case (severity of the disease)

18. Personalizing Customer Experience, Fake Order Prediction & Demand Forecasting

This project aims to deploy the tools that will provide our startup with demand forecasting of customers, personalization of discoverability and bonuses of customers to improve customer experience and subsequently user conversions, and differentiation between real and fake orders.

19. [Virtual Horizon] Creating a web-based platform for remote education for students

Humans have mammoth potential which depends upon the training of mind. The world is bigger to an extent by which you can think and visualize. Virtual horizon aims for mentoring the future for such underprivileged children and the neglected part of the society.

20. Log Shield

This project leverages AI and machine learning to enhance the analysis of System and Event Management (SIEM) logs, with the goal of detecting anomalies and potential security threats in real-time. Utilizing advanced correlation algorithms, the system will continuously learn and evolve (optional, but we will try), providing more accurate and effective threat detection. The end result will be a smarter, more proactive security system, powered by AI and machine learning, with reduced risk of data breaches or other security incidents.

21. AvaTalks

The aim of this project is to develop a deep learning based, realistic speaking avatar capable of generating speech from text inputs. The avatar will have a human-like voice and be able to articulate words and sentences in a natural manner.
To achieve this objective, the project will employ the latest deep learning techniques and build upon a large corpus of human speech data. The avatar will be capable of generating speech for any given text input, and will have the ability to tailor its speech according to various factors such as tone, emotion, and pace.
Initially, the model will be trained primarily on the English language, but the ultimate goal is to make it available in Urdu as well to reach a wider audience, particularly among the Urdu-speaking community. The project team will also develop a web application allowing users to create presentations and provide text inputs for each page, with the avatar delivering the final presentation.

22. Vote With Confidence - AI & Blockchain based voting system

A Mobile application that utilizes Blockchain and AI encryption for secure, rigging free and easy voting.

23. SecureMedOps

SecureMedOps is a Secure Medical System which collects Medical Examination Reports in Image/ Document form fetch the data in text form, Process it and Implement it in a Block chain Based System, in which a smart contract will be created and confidential data of Patient and Doctor will be stored in Encrypted form. Upon Doctor’s Demand the required Encrypted data is decrypted and presented in Graphical Representation (Charts containing Medical Record of a Specific Patient).

24. Automatic Generation of medical imaging reports

Automatic generation of medical imaging reports aims to save time and reduce errors by automatically generating reports based on medical images. It combines computer vision to understand image contents and natural language processing to generate captions. However, there are several challenges in automatic report generation, such as identifying abnormal regions and generating long reports with multiple sentences and findings, and impressions.

25. Campus Navigation in AR

The AR Navigation System is an innovative solution that combines augmented reality (AR) with traditional GPS navigation to provide users with a more immersive, interactive, and engaging navigation experience. This will provide users with a platform to have a guidance when you're new on campus.

26. Intelligent Code Review Tool for MERN Stack Developers

We are developing a web app and a Visual Studio Code extension for code review and analysis of MERN stack projects. The web app integrates with a user's GitHub account to fetch their MERN stack repositories and provides a centralized dashboard for code health analysis, including static and dynamic code analysis, AI-based smell detection, and SQL query optimization.

27. Learn Up

The aim of our project is to develop a smart and intelligent learning platform that will be designed to cope up with the changing needs of smart assessment and teaching. Our main focus is to achieve the flexibility and student engaging. In this project we will implement personalized learning technique to evaluate every student according to his/her performance

28. Binance Trading with Machine Learning

The objective of this project is to develop a trading algorithm for the Binance exchange that leverages machine learning techniques. The aim is to improve the efficiency and accuracy of trading decisions and provide advanced insights into market trends, patterns, and risk management.

29. CodeQuest

This is a web-based application that utilizes natural language processing (NLP) and knowledge graph techniques to generate C++ programming quizzes automatically. The app will analyze and extract information from C++ code and generate multiple-choice questions based on the syntax, concepts, and coding patterns used in the language. This tool will help students and developers improve their C++ programming skills in an interactive and self-paced manner.